Jeremy Shaw

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Education

California State University, Sacramento cumulative GPA 3.41 January 2017 - May 2020

B.S Computer Engineering

Honors and Activities: Dean's Honor List, Tau Beta Pi, IEEE, IPC, ACM

Experience

Caltrans - Engineering Intern Worked 20-40 hours per week July 2018 - Jan 2020

- Digitized in-class, professional development content and delivered it via an internal learning management system (Moodle) to Caltrans' licensed professional engineers and engineers in training.
- Created greater internal awareness of my office's services and mission by upgrading and updating our internal website (Caltrans Onramp - Professional Development).
- Enabled greater statewide collaborative efforts to update the manual with current procedures, standards, and financial methods by modernizing an ancient, central document (Workflow Task Manual).

Projects

JAWOS Time sharing OS for Intel x86 systems, developed in C and x86 assembly Fall 2019
https://github.com/jeremyshaw/JAWOS - cross disciplinary team

- Developed strong problem solving skills due to helping other teams; by continuously reevaluating my own coding practices and design decisions.

MicroGreenHouse Web monitored & controlled greenhouse, using rPi, Python, Arduino, & C Spring 2018
https://github.com/jeremyshaw/microgreenhouse - cross disciplinary team

- Learned the necessity of properly documenting my self-developed APIs and providing better code examples, as to prevent wasted work and alleviate time spent debugging the system.

EAR In-home robot for storing and retrieving items, using rPi, Python, Arduino, & C Fall 2019 - Spring 2020
https://github.com/JAJA-CSUS/EAR - work in progress; cross disciplinary team

- Learned documentation is to guide, but also protect the team from feature creep and outside expectations.
- Systems Design course covering product design, market evaluation, ethics, IEEE documentation, and design for testing.

CPU 5 stage Accumulator CPU in Verilog; UVM verification & testbenching Spring 2019

- In our courses, we cover a lot of how programs work, how high level languages are translated into machine code, and how that machine code controls the data flow (datapath) within a computer. In this project, I implemented the hardware side of the equation. Later, **JAWOS** explored the low level OS and software necessary for computer hardware operation.

Fan Duct FreeCAD modeled, 3D Printed using PLA Summer 2019
https://github.com/jeremyshaw/fan-duct

- Iteratively created a fan duct for my desktop computer, preventing hot air recirculation and lowering load temperatures by ~8C for the CPU (from ~85C in Cinebench R15 to ~77C; 33C ambient)

GPU powered VM Windows Guest, Linux Host with GPU passthrough March 2020

- Utilized KVM & IOMMU to enable high performance GPU-accelerated applications in Win10 guest OS

Relevant Courses

CMOS and VLSI (VLSI Design and Analog Effects) Operating System Pragmatics (OS Architecture)
Advanced Computer Organization (Computer Architecture) Intermediate Object Oriented Programming
Data Structures and Algorithms Advanced Logic Design (Digital Logic Synthesis & RTL)
Computer Interfacing (Embedded Microcontrollers and Devices) Computer Networking and Internet